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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/070,847	03/11/2002	Johann Leist	37904-0037	2541

28481 7590 08/19/2004

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EXAMINER

LOPEZ, CARLOS N

ART UNIT

PAPER NUMBER

1731

DATE MAILED: 08/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/070,847	Applicant(s) LEIST ET AL.	
	Examiner Carlos Lopez	Art Unit 1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-37 is/are pending in the application.
- 4a) Of the above claim(s) 21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19,20 and 22-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1 IDS</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

The third and fourth preliminary amendments filed on 8/6/04 have been entered.

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 19-20 and 22-37, drawn to method for producing glass crucibles, classified in class 65, subclass 17.3.
- II. Claim 21, drawn to a heating device comprised of two electrodes, classified in class 219, subclass 200.

Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claims 19-20, 22-37, drawn to method for producing glass.

Group II, claim 21, drawn to a heating device comprised of two electrodes.

The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: The special technical feature of having two electrode for heating purposes does not

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contribute to the art. Valchev et al (US 3,835,230) discloses a two-electrode system for heating purposes.

During a telephone conversation with Andrew Tiajolloff on 9/6/04 a provisional election was made with traverse to prosecute the invention of group I, claims 19-20, 22-37. Affirmation of this election must be made by applicant in replying to this Office action. Claim 21 is withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 19-20, 22-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Werdecker et al (US 6,381,987). Werdecker discloses a method for making quartz glass crucibles (Col. 4, lines 36ff). As noted by Werdecker an electric arc 7 is formed by a pair of electrodes 8 (Col. 6, lines 3ff).

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It is deemed that electrodes 8 are considered as the claimed anode and cathode in order to form the disclosed electric arc. It is also noted that by definition, an electric arc is a high electric current between two separated conductors (See the cited Encyclopedia Britannica electric arc definition), which in the instant case are the disclosed electrodes 8, acting as an anode and cathode. Werdecker forms a glass crucible by forming a mixture of SiO₂ powder into a preform wherein the preform is then rotated and an electric arc heats the preform to thus melt the powder and form the crucible (see claim 1 and Col. 2, lines 9ff). Werdecker further notes of rotating the preform along its longitudinal axis to assure an even heating of the preform being turned in a crucible. Werdecker is silent disclosing an additional electric arc, heating source. However, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have provided a duplicate heat source, electric arc, in view of *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960) which teaches that the duplication of parts, in the instant case of an additional electric arc, has no patentable significance unless a new and unexpected result is produced and since the duplication of an electric arc would assure even heating of the preform when combined with the rotation of the preform as taught by Werdecker.

In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960) (Claims at issue were directed to a water-tight masonry structure wherein a water seal of flexible material fills the joints which form between adjacent pours of concrete. The claimed water seal has a "web" which lies ** in the joint, and a plurality of "ribs" ** >projecting outwardly from each side of the web into one of the adjacent concrete

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slabs. <The prior art disclosed a flexible water stop for preventing passage of water between masses of concrete in the shape of a plus sign (+). Although the reference did not disclose a plurality of ribs, the court held that mere duplication of parts has no patentable significance unless a new and unexpected result is produced.). In the instant case, an additional electric arc is being duplicated for the purpose of providing even heating of the preform, which is deemed as not resulting in any unexpected results regarding homogenous heating of the preform. Since two heat sources heating different portions of the preform, being turned to a crucible, would provide a more homogeneous heating of the preform when compared to only using one heat source.

As for claim 20 and 22, the duplicate electrodes would be placed in regions not heated by the other electrode in order to provide homogenous heating of the preform.

As for claims 23-24, the electrode of Werdecker is displaceable about its longitudinal axis and its duplication would be expected to be the same. Hence, both electrodes, each being independently separate, would independently be displaceable from one another.

As for claims 25-28, both electrodes would be arranged at equal distances from the periphery of preform cause in not doing so would result in an uneven heating of the preform. An electrode very close to the periphery of the preform would heat the preform to a higher temperature than the electrode at a farther distance from the periphery of the preform.

Claims 19-20, 22-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al (US 5,989,021) Sato discloses a method for the production of large diameter quartz crucibles (Abstract). Sato's method comprises using an arc discharge formed by an electrode arrangement 51 and 52, as a heating source for melting supplied silicon dioxide powder onto a substrate 3 (Col. 4, lines 36ff). Sato's "arch discharge" which is formed by electrodes 51 and 52 is deemed as the claimed electric arc (Col. 5, lines 46ff). Furthermore, in order to provide an electric discharge as disclosed by Sato, electrodes 51 and 52 would be expected to act as anode and cathode. It also noted that the electric arc of Sato would be expected to heat a portion of the glass crucible being formed. Sato is silent disclosing a duplicate electric arc to fuse the supplied glass powder. However, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have provided a duplicate heat source, electric arc/discharge, in view of *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960) which teaches that the duplication of parts, in the instant case of an additional electric discharge, has no patentable significance unless a new and unexpected result is produced and since the duplication of an electric discharge would assure proper heat fusing of the supplied glass powder to form the larger glass crucibles. Furthermore, in view of the cited prior art, which only uses one heat source to form conventional glass crucibles, Sato's process would be expected to require additional heat source in order to assure that the larger glass crucibles being made are provided with

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homogeneous heating of the glass powder and to additionally increase the rate at which the glass crucible is made since more heat would be available to fuse the supplied glass powder into a glass crucible.

In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960) (Claims at issue were directed to a water-tight masonry structure wherein a water seal of flexible material fills the joints which form between adjacent pours of concrete. The claimed water seal has a "web" which lies ** in the joint, and a plurality of "ribs" ** >projecting outwardly from each side of the web into one of the adjacent concrete slabs. <The prior art disclosed a flexible water stop for preventing passage of water between masses of concrete in the shape of a plus sign (+). Although the reference did not disclose a plurality of ribs, the court held that mere duplication of parts has no patentable significance unless a new and unexpected result is produced.). In the instant case, an additional electric arc is being duplicated for the purpose of providing sufficient heating of the of the supplied glass powders. Since two heat sources heating the supplied glass powder, being fused into a crucible by the heat source, would provide a more homogeneous heating of the glass powder and increase the rate at which the glass crucible is made since more heat would be available to fuse the supplied glass powder into a glass crucible.

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As for claim 20 and 22, the duplicate electrodes would be placed in regions not heated by the other electrode in order to assure that all the supplied glass powders are sufficiently heated.

As for claims 23-24, the duplicated electrode of Sato being independently separate, would be expected to independently be displaceable from the other electrode.

As for claims 25-28, both electrodes would be arranged at equal distances from the periphery of the formed glass crucible cause in not doing so would result in an uneven heating of the formed glass crucible. An electrode very close to the periphery of the preform would heat the glass crucible to a higher temperature than the electrode at a farther distance from the periphery of the glass crucible resulting in deformation of the glass crucible.

As for claim 29-36, as noted above the duplicate electrode may be used to assure proper heating of all the glass powder being supplied.

As for claim 37, the electrodes 51 and 52 are inclined toward a section of the glass crucible as shown in figure 1 of Sato.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Reference C and N has been cited to show the state of the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlos Lopez whose telephone number is 571.272.1193. The examiner can normally be reached on Mon.-Fri. 8am - 5pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571.272.1189. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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